

FILING RECEIPT

Official

In re application of:

Sean R. WAKAYAMA

Atty. Dkt. No.: R-8767

Serial No.: 08/917,480

Group Art Unit: 3644

Filed: August 26, 1997

Examiner: T. DINH

For: RECONFIGURATION CONTROL SYSTEM FOR AN AIRCRAFT WING

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GROUP 3600

PAPER(S) ENTITLED:

1. REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. §1.116
2. PETITION FOR AN EXTENSION OF TIME OF ONE MONTH (With Authorization to Change the Prescribed Fee)

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Date: May 31, 2001

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Raymond H. J. Powell, Jr.Registration No. 34,231Signature:  Date: May 31, 2001

AMENDMENT UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE  
GROUP ART UNIT 3644

**PATENT APPLICATION****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Sean R. WAKAYAMA

: Atty. Dkt. No.: R-8767

Serial No.: 08/917,480

: Group Art Unit: 3644

Filed: August 26, 1997

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For: RECONFIGURATION CONTROL SYSTEM FOR AN AIRCRAFT WING

**REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. §1.116**

Honorable Assistant Commissioner  
for Patents  
Washington, D.C. 20231

**ATTN: BOX AF**

Sir:

Responsive to the Office Action dated February 9, 2001, reconsideration and withdrawal of all outstanding rejections are respectfully requested for the reasons set forth in detail below.

The Office Action was mailed on February 9, 2001, and set a shortened three month statutory reply period. Attached hereto is a Petition for a One Month Extension of Time and our check for the prescribed fee. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension in excess of the amount paid by check is to be charged to Deposit Account No. 16-2372.

Claims 1-20 are pending in the application.

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The final Office Action rejects claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Ashkenas (U.S. Patent No. 2,549,045) in view of Borzachillo (U.S. Patent No. 4,146,200). This rejection is respectfully traversed.

The '045 patent to Ashkenas teaches a tail-less aircraft. As discussed succinctly in the Boards' Decision of Appeal:

Ashkenas' invention relates to anti-stall slots for airplanes, and more particularly, to a means and method for controlling tip stall in airplanes having swept-back wing panels. One wing panel W of an all-wing army bomber is shown in Figure 1. The wing panel includes elevons 4, rudders 5 for producing unilateral drag at the wing tips and landing flaps 6.

However, as the Board when on to acknowledge:

Specifically, Ashkenas does not disclose the "control surface reconfiguration system" as recited in claims 1-10, the "reconfiguration means" as recited in claims 11-18, or the "reconfiguring" step as recited in claims 19 and 20 since Ashkenas does not specifically teach or disclose that his control surfaces (i.e., the elevons 4, the rudders 5 and the landing flaps 6) are selectively reconfigurable to a plurality of predetermined positions as required to optimize the spanwise force distribution across the wing for each of a plurality of different flight configurations.

The '200 patent teaches a conventional (tailed) aircraft which includes a fuselage 5, swept thin wings 6, and tail 7, e.g., a pair of canted vertical stabilizers or fins 8, and conventional horizontal stabilizers 9. The wing 6, includes conventional main flaperons 11 mounted on the trailing edge section of each wing 6. Flaperons 11 operating together can be used as a conventional flap for take-off and landing, or can operate differentially as shown in FIG. 2, i.e., in opposition to each other, to cause the aircraft to roll. To impress an additional increment of directional control on the aircraft at high angles of attack, and thereby effectively augment lateral or roll control, auxiliary control surfaces or flaperons 12 are mounted between the main flaperons 11 and fuselage 5 on each wing 6. See column 3, lines 4-13 and 30-35. Because of the close proximity of the auxiliary flaperon 12 to the tail 7, the induced aerodynamic forces exerted by the air flow trailing over the auxiliary flaperon 12

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will impress an additional aerodynamic moment against the tail 7 and thereby augment the aileron to roll the aircraft. See column 3, lines 55-60.

35 U.S.C. 103 authorizes a rejection where to meet the claim, it is necessary to modify a single reference or to combine it with one or more other references. After indicating that the rejection is under 35 U.S.C. 103, the examiner should set forth in the Office action (1) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (2) the difference or differences in the claim over the applied reference(s), (3) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (4) an explanation why such proposed modification would have been obvious to one of ordinary skill in the art at the time the invention was made. See M.P.E.P. §706.02(j). In the discussion which follows, the specific requirements for establishing a prima facie case of obviousness will be signaled by the terminology Item (1), Item (2), etc.

The previous Amendment (12/12/200) advanced the argument that:

Since the aircraft of the primary reference to Ashkenas lacks a tail, by design and necessarily, one of ordinary skill would not have been realistically motivated to incorporate the auxiliary flaperons 12 of Borzachillo into Ashkenas. Again, **Borzachillo, as explained above, premises the use of the auxiliary flaperons on the presence of a tail section on the aircraft being modified.** Contrary to what is suggested in the Office Action, Borzachillo does not teach or suggest that the auxiliary flaperons are universally applicable to any type of aircraft, whether tailed or tailless, "to optimize the maneuverability of the aircraft." In addition to no suggestion of using the auxiliary flaperons in a tailless aircraft, Borzachillo also provides no enablement to one of ordinary skill on how one might go about that enterprise.

The final Office Action missed the point entirely. In particular, the Office Action stated that:

The central argument of the applicant centers on the application of the Borzachillo reference in combination with Ashkenas. The applicant argues that since Borzachillo clearly shows that his aircraft has a tail, it would not have been obvious to one skilled in the art at the time the invention was made to have combined the prior arts. The Examiner respectfully disagrees with this argument. The Examiner utilizes the

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Borzachillo reference, as directed by the Board of Appeal in its decision dated 7/27/2000, to show that the control surfaces along a wing is set for different flight conditions. The Examiner in no way intended to suggest that the tail of Borzachillo's aircraft be added to Ashkenas' aircraft. It is clear from the teaching of Borzachillo that Ashkenas' aircraft control surfaces have predetermined positions so as to perform certain flight maneuvers/conditions with optimized spanwise force distribution across the wing.

As mentioned above, citing to the previously filed Amendment, there is no motivation (Item (4) above) for extracting the flaperons 12 from the aircraft taught by the '200, to discard all other portions (the tail) of the '200 patent, and then to combine the flaperons with the aircraft taught by the '045 patent. Moreover, there is no rationale for asserting that the resultant combination of the '045 and '200 patents somehow possesses an inherent, i.e., undisclosed, property allowing it to achieve optimized spanwise force distribution, since neither of the applied references disclose this attribute. It is respectfully submitted that this rejection amounts to classic hindsight analysis. In addition, the Office Action has failed to set forth a prima facie case of obviousness for all of the reasons enumerated below.

First, the Office Action has not articulated any cogent reasoning as to why one of ordinary skill in the art would have extracted the flaperons taught by the '200 patent from the reference while ignoring the tail assembly. The '200 patent is the applied prior art, not the Examiner's analysis of the '200 patent. When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such teaching or suggestion appears in the reference. See In re Rijckaert, 28 U.S.P.Q.2d 1955,7 (Fed. Cir. 1993). Moreover, it is well settled that "It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to a full appreciation of what such reference fairly suggests to one skilled in the art." Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, 796 F.2d 443, 488, 230 U.S.P.Q. 416, 419 (Fed. Cir. 1986), citing In re Wesslau, 353 F.2d 238, 241, 147 U.S.P.Q. 391, 393 (CCPA 1965), cert. denied, 484 U.S. 823 (1987). In

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short, in order to apply the teaching of the '200 patent, the Office Action must apply the teaching that one of ordinary skill in the art would extract from the '200 patent and not some lesser portion of the teaching.

Having done that, i.e., having recognized and extracted both the flaperons and the tail assembly (the actual teaching of the '200 patent), it will be appreciated that the combination of the '045 patent with the flaperon-tail assembly teaching of the '200 patent is impermissible. The '045 patent teaches a tailless aircraft. In order to employ the flaperons taught by the '200 patent, one of the tail assemblies postulated by the '200 patent **must** be included in the combination, since the '200 patent clearly teaches:

... the auxiliary flaperon control described herein will provide a beneficial additional increment of aerodynamic force on any aircraft employing a single vertical fin or a V-tail, on aircraft employing a vertical fin or fins without horizontal stabilizers, or on aircraft employing a tall vertical fin with horizontal stabilizers mounted at the upper end of the fin.

See column 4, lines 29-36. Since the addition of a tail to the airplane taught by the '045 patent would necessarily change the operating principal of the '045 patent, the combination is wholly improper. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. See M.P.E.P. §2143 citing In re Ratti, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959).

Moreover, to the extent that the Office Action is considered to have been prepared as suggested by the Board of Appeals, that assumption is unsupportable. The Board's ruling stated that:

We remand this application to the examiner to consider the patentability of claims 1-20 under 35 U.S.C. §103 over the cited prior art. In addition, the examiner should

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consider searching for other prior art [i.e., computer-based flight management systems, aircraft operating manuals, and pilot operating handbooks] that would teach how the control surfaces along a wing's trailing edge should be set for different flight conditions (e.g., take-off, landing, cruising, pitching).

However, the '200 patent does not teach a computerized flight management systems of any type.

To the extent that the Examiner sees the Board's holding as an invitation to consider whether the invention recited in claims 1-20 is obvious in view of the inherent characteristics of the aircraft taught '045 patent, alone or as modified by the teachings of the '200 patent, Applicant respectfully submits that the Board could not have been inviting such an analysis. The standard of teaching required of a prior art reference to support a 35 U.S.C. §103 rejection is substantially more than to support a 35 U.S.C. §102 rejection of anticipation, however, since the Doctrine of Inherency does not extend beyond anticipation. Inherency of an advantage and its obviousness are different questions; that which may be inherent is not necessarily known, obviousness cannot be predicated on that which is unknown. In re Adams, 53 CCPA 996, 356 F.2d 998, 148 U.S.P.Q. 742 (1966). Inherency and obviousness are entirely different concepts. In re Rinehart, 531 F.2d 1048, 189 U.S.P.Q. 143 (CCPA 1976). A retrospective view of inherency is not a substitute for some teaching or suggestion that supports the selection and use of the elements in the particular claimed combination. In deciding that a novel combination would have been obvious, there must be a supporting teaching in the prior art; for that which may be inherent is not necessarily known, and obviousness cannot be predicated on what is unknown. See In re Newell, 13 U.S.P.Q.2d 1248, 1250 (Fed. Cir. 1989). In short, obviousness cannot be proven by inherency.

For all of the reasons numerated above, it is respectfully submitted that the Examiner has not set forth a prima facie case of obviousness. In particular, given that one of ordinary skill in the art would have recognized a fundamental conflict in the teachings of the applied references, a conflict not recognized, much less addressed, by the Office Action, that one would not have attempted to

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combine the primary and secondary references as suggested in the Office Action. In that the combination of references is improper, a prima facie case of obviousness cannot be established by the combination.

Having said that, and assuming that the Examiner will consider the arguments unpersuasive<sup>1</sup>, Applicant submits there are still other, independent reasons for traversing the applied rejection. In particular, since there are at least two limitations in each of the independent claims that are not taught or even suggested by the applied references, either alone or in combination, no possible combination of the applied references could render independent claims 1, 11, and 19 obvious.

First, each of claims 1, 11, and 19 recite "a wing having a trailing edge and independently deflectable flight control surfaces located along the trailing edge." Neither the '045 nor the '200 teach or suggest this feature. For example, all of the wing surfaces taught by the applied references include pairs of surfaces that are operated simultaneously. In the '200 patent, it clearly states that:

The auxiliary flaperons 12 are hinged to the trailing edges of the wings 6 by conventional mechanical means to move upwardly and downwardly in the same manner as the main flaperon 11, but differentially with respect thereto during a roll maneuver, i.e., when the main flaperon 11 on one side of the aircraft is moved downwardly to impress a rolling motion on the aircraft, the auxiliary flaperon 12 on the same side is moved upwardly as shown in FIG. 2, and vice versa. . . . However, the auxiliary flaperons 12 can be separately controlled by the pilot for movement together downwardly, i.e., drooped, as flaps, to augment the main flaperons during takeoffs and landing, and also as speed brakes.

<sup>1/</sup>

The notion that Applicant must persuade the Examiner that the rejection set forth in the latest Office Action has been overcome is incorrect. The evidentiary standard to be used throughout *ex parte* examination in setting forth a rejection is a preponderance of the totality of the evidence under consideration. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992) ("After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument."). See, for example, M.P.E.P. §§ 716.01 and 2107.



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Thus, there is no teaching in any of the applied references with respect to "independently deflectable control surfaces." Moreover, the Office Action makes no attempt to even address where such elements are to be found in the applied references, thus failing to satisfy Items (1) and (2) regarding the minimum requirements for a prima facie case of obviousness. Furthermore, the Office Action fails to point out the necessary modifications to incorporate the recited feature into the proposed combination of references, thus failing to satisfy Item (3) above.

Second, the Board confirmed that the '045 patent does not disclose the control surface reconfiguration system recited in claims 1, the reconfiguration means recited in claim 11, or the reconfiguring step recited in claim 19. The Office Action does not even attempt to articulate where these limitations are found in the secondary reference, i.e., the '200 patent. Applicant submits that since neither of the applied references teach or even suggest, for example, "a control surface reconfiguration system wherein, for each of a plurality of different flight conditions, the flight control surfaces are selectively reconfigurable to respective predetermined positions, which in combination, optimize the spanwise force distribution across the wing for each of the plurality of different flight conditions," no possible combination of the applied references can render the invention of claim 1 obvious.

Third, with respect to independent claim 11, Applicant submits that the examining procedure applied by the Examiner is erroneous, since the Examiner improperly interprets the elements recited in means-plus-function language. 35 U.S.C. §112, sixth paragraph, permits an element in a claim for a combination to be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

In the landmark case of In re Donaldson, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994), the Court of Appeals for the Federal Circuit (C.A.F.C.) held that the U.S. Patent and Trademark Office is required

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to interpret language reciting elements of a combination in means-plus-function language in accordance with 35 U.S.C. §112, sixth paragraph. In particular, the Donaldson court held that elements expressed in means-plus-function language must be interpreted in light of the corresponding structure, material, or acts described in the specification and equivalents thereof, to the extent that the specification provides such disclosure. *Id* at 1848.

Thus, in order for the elements disclosed in a reference to obviate a "means-plus-function" claim, for each "means" limitation in the claim there must be equivalent structure in the accused device which performs an identical function. The presence or absence of equivalent structure is determined by reference to the embodiments disclosed in the specification, and their equivalents. However, the Office Action does not even to equate the reconfiguration means to any structured disclosed in the applied references. Thus, the Office Action has not set forth a prima facie case of obviousness regarding claim 11.

Finally, the Office Action seems to imply that at some predetermined (but undefined ) position, it is inherent that the spanwise force distribution across the wing is optimized. Even assuming *arguendo* that this assessment is correct, the combination would still fail to render the claimed invention obvious. First, as discussed above, it is black letter law that obviousness cannot be established by inherency. There is simply no teaching within the four corners of the '200 patent that the flaperons have any impact of spanwise force distribution in any position, since the '200 patent does address this aerodynamic phenomena. Secondly, the flaperons taught by the '200 patent cannot be the flight control surfaces recited in the claims, since the flaperons in the '200 patent teach away from "independently deflectable flight control surfaces" recited in each of the independent claims.

For all of the reasons given above, i.e., (1) that the applied references cannot be combined as suggested and (2) that at least two limitations of independent claims 1, 11, and 19 are completely absent in the proposed combination, it is respectfully submitted that no possible combination of the

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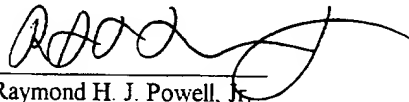
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applied references could render the invention recited in claims 1-20 obvious. The Examiner is therefore requested to reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection is respectfully requested. Claims 2-10, depending from claim 1, claims 12-18, depending from claim 11, and claim 20, depending from claim 19, are allowable for all of the reasons given regarding the respective independent claims.

In light of the remarks presented above, it is respectfully submitted that the application is in condition for allowance, and such action is hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully Submitted,



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Attorney Docket No. R-8767